

REMARKS

I. INTRODUCTION

With the addition of claim 27, claims 13 to 27 are pending. Applicants respectfully request reconsideration of the present application in view of this foregoing amendments and following remarks.

Applicants thank the Examiner for acknowledging and considering the IDS papers, PTO-1449 forms and the references.

II. ALLOWABLE SUBJECT MATTER

Applicant notes with appreciation the indication of allowable subject matter contained in claims 18 and 22 to 26. In this regard, the Examiner will note that each of claims 18, 22 and 23 has been rewritten herein in independent form to include all of the limitations of its respective base claim. It is therefore respectfully submitted that claims 18, 22 and 23 are in condition for immediate allowance. Claim 24 depends from claim 23, claim 25 depends from claim 22, and claim 26 depends from claim 24, so claims 24 to 26 are also believed to be in condition for immediate allowance.

III. OBJECTION TO THE DRAWINGS

The Examiner objected to the drawings because the rectangular boxes in Figs. 1, 2 and 3 lack descriptive text labels. In this regard, Figs. 1, 2 and 3 have been amended to include descriptive text labels. No new matter has been added. Annotated marked-up drawings of Figs. 1, 2 and 3 are also included. Entry and approval of amended Figs. 1, 2 and 3 is respectfully requested. Accordingly, withdrawal of the objection to the drawings is respectfully requested.

IV. REJECTION OF CLAIMS 13-15 and 19-21 UNDER 35 U.S.C. § 103(a)

Claims 13 to 15 and 19 to 21 were rejected under 35 U.S.C. § 103(a) as unpatentable over Cox et al., U.S. Patent No. 5,732,333, in view of Salinger, U.S. Patent No. 6,252,912, and further in view of Dent, U.S. Patent No. 5,262,734.

Claim 13 relates to a transmitter for sending a signal over a wireless channel. Claim 13 recites that the transmitter includes a modulator for modulating the signal to produce a modulated signal that is distributed over a subcarrier, a predistorter for predistorting the modulated signal distributed over the subcarrier according to an amplifier

transfer property in order to produce a predistorted signal, a mixer for converting the predistorted signal from a baseband frequency into an intermediate frequency in order to produce a converted signal, an amplifier for amplifying the converted signal in order to produce an amplified signal, an antenna for sending a first portion of the amplified signal, a mixer for mixing a second portion of the amplified signal down from the intermediate frequency to the baseband frequency in order to produce a mixed-down signal, a measurement module for comparing the mixed-down signal with the predistorted signal to determine the amplifier transfer property and for notifying the predistorter of the amplifier transfer property, a signal generator for generating a test signal, and an input element for inputting at preset times the test signal into one of the modulated signal, the predistorted signal, and the converted signal. Claim 13 further recites that the measurement module compares the test signal in the mixed-down signal with the test signal in the modulated signal, the predistorted signal, or the converted signal to obtain the amplifier transfer property.

The Cox reference purportedly relates to a linear transmitter that uses predistortion. As admitted on page 4 of the Office Action, Cox is silent on a signal generator for generating a test signal, and an input element for inputting at preset times the test signal into the modulated signal, the predistorted signal, or the converted signal, wherein the measurement module compares the test signal in the mixed-down signal with the test signal in the modulated signal, the predistorted signal, or the converted signal to obtain the amplifier transfer property. Instead, the Cox reference merely refers to obtaining a transfer property of an amplifier 115, in which the signals that are actually sent are compared with the same signals before being amplified. (See col. 6, lines 5 to 21). In this regard, unlike recited subject matter of claim 13 in which the test signal is known beforehand, according to Cox the **signal to be sent can be anything which renders the signal comparison difficult**. It is therefore respectfully submitted that the Cox reference does not disclose, or even suggest, comparing test signals before and after being fed to an amplifier, as recited in claim 13.

The Salinger reference purportedly concerns an adaptive predistortion system, in which the test symbols are also part of the data being sent. Hence, the test symbols described by the Salinger reference are not known in advance. It is therefore respectfully submitted that the Salinger reference does not disclose, or even suggest, comparing test signals before and after being fed to an amplifier, as recited in claim 13. Moreover, Salinger

refers to a completely different structure of the transmitter (e.g., predistorter and adaptive predistorter).

The Dent reference purportedly concerns an amplification system, in which two signal tones are generated by means of a frequency generator which produces two test frequencies that are mixed to the required RF transmission frequency. In this regard, it is respectfully submitted that Dent does not disclose, or even suggest, comparing test signals before and after being fed to an amplifier, as recited in claim 13.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

As indicated above, the combination of Cox, Salinger and Dent fails to disclose all of the limitations of claim 13, in particular, a signal generator for generating a test signal, and an input element for inputting at preset times the test signal into the modulated signal, the predistorted signal, or the converted signal, wherein the measurement module compares the test signal in the mixed-down signal with the test signal in the modulated signal, the predistorted signal, and the converted signal to obtain the amplifier transfer property. Accordingly, for at least this reason, claim 13 is not rendered obvious by the asserted combination.

Claims 14 and 15 depend from claim 13 and therefore include all of the limitations of claim 13. Claim 19 recites features analogous to claim 13. Claims 20 and 21 depend from claim 19 and therefore include all of the limitations of claim 19. Accordingly, claims 14, 15 and 19 to 21 are likewise not rendered obvious for at least the same reasons that claim 13 is not rendered obvious.

It is also respectfully submitted that the Office Action's assertions that it would have been obvious "to incorporate the teachings of Salinger into the method of Cox et

al. because it would provide a simple alternative to the adaptive predistorter in measuring the nonlinear distortions caused by the power amplifier,” and “to further incorporate the teachings of Dent et al. into the method of Cox et al. and Salinger because it would provide for means for generating the test signals needed for measuring the distortion effect of the amplifier,” are clearly speculative suggestions by the Examiner, which lack proper support in the Cox, Salinger, or Dent reference. The cases of In re Fine, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988), and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that if the Office Action reflects a subjective “obvious to try” standard, it does not constitute proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of In re Fine stated that:

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . **One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.**

In re Fine, 5 U.S.P.Q.2d at 1600 (citations omitted; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943 & 1944 (citations omitted; italics in original). Thus, the proper evidence of obviousness must show why there is a suggestion to combine the references so as to provide the subject matter of the claims and its benefits. Such showing is lacking in this Office Action.

Moreover, it is respectfully submitted that a *prima facie* case of obviousness has not been made in the present case, since the Office Action never made any findings, such as, for example, regarding what the ordinary skill level in the art would have been at the time the claimed subject matter of the present application was made. (See In re Rouffet, 47 U.S.P.Q.2d 1453, 1455 (Fed. Cir. 1998) (the “factual predicates underlying” a *prima facie*

“obviousness determination include the scope and content of the prior art, the differences between the prior art and the claimed invention, and the level of ordinary skill in the art”)). It is respectfully submitted that the proper test for showing obviousness is what the “combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art,” and that the Patent Office must provide particular findings in this regard — the evidence for which does not include “broad conclusory statements standing alone.” (See In re Kotzab, 55 U.S.P.Q. 2d 1313, 1317 (Fed. Cir. 2000) (citing In re Dembiczak, 50 U.S.P.Q.2d 1614, 1618 (Fed. Cir. 1999) (obviousness rejections reversed where no findings were made “concerning the identification of the relevant art,” the “level of ordinary skill in the art” or “the nature of the problem to be solved”))). It is again respectfully submitted that there has been no such showing by the Office Action.

In short, the Office has failed to carry the initial burden of presenting a proper prima facie case of obviousness. (See In re Oetiker, 977 F.2d 1443, 1445, 24, U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992)).

In view of the foregoing, it is respectfully submitted that Cox in view of Salinger and Dent does not render obvious any of claims 13 to 15 and 19 to 21. Withdrawal of the rejection of claims 13 to 15 and 19 to 21 under 35 U.S.C. § 103 over Cox in view of Salinger and Dent is therefore respectfully requested.

V. REJECTION OF CLAIMS 16 and 17 UNDER 35 U.S.C. § 103(a)

Claims 16 and 17 were rejected under 35 U.S.C. § 103(a) as unpatentable over the Cox reference in view of the Salinger and Dent references, and in further view of Mojoli, U.S. Patent No. 4,615,040.

Claims 16 and 17 depend either directly or indirectly from claim 13, and are therefore allowable for the same reasons as claim 13, since any review of the Mojoli reference makes plain that it does not cure the critical deficiencies of the Cox reference, the Salinger reference, and the Dent reference as applied against parent claim 13. Accordingly, dependent claims 16 and 17 are allowable over the applied combination of references.

V. New Claim 27

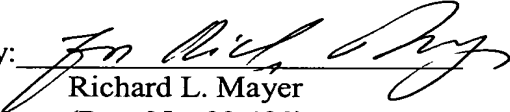
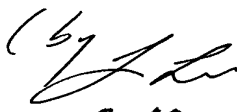
New claim 27 has been added herein. It is respectfully submitted that new claim 27 does not introduce new matter and is fully supported by the present application, including the Specification. Since claim 27 depends from claim 13, it is respectfully submitted that new claim 27 is patentable over the applied references for at least the same reasons more fully set forth above in support of the patentability of claim 13.

CONCLUSION

In view of the above, it is believed that the rejections have been obviated, and it is therefore respectfully submitted that claims 13-27 are allowable. It is therefore respectfully requested that the rejections be reconsidered and withdrawn, and that the present application issue as early as possible.

Respectfully submitted,

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AMENDMENTS TO THE DRAWINGS

The attached two sheets of drawings include changes to Figs. 1, 2 and 3. In particular, Figs. 1, 2 and 3 have been amended to include descriptive text labels for the boxes.

Attachments: 2 replacement sheets

2 annotated marked-up drawings

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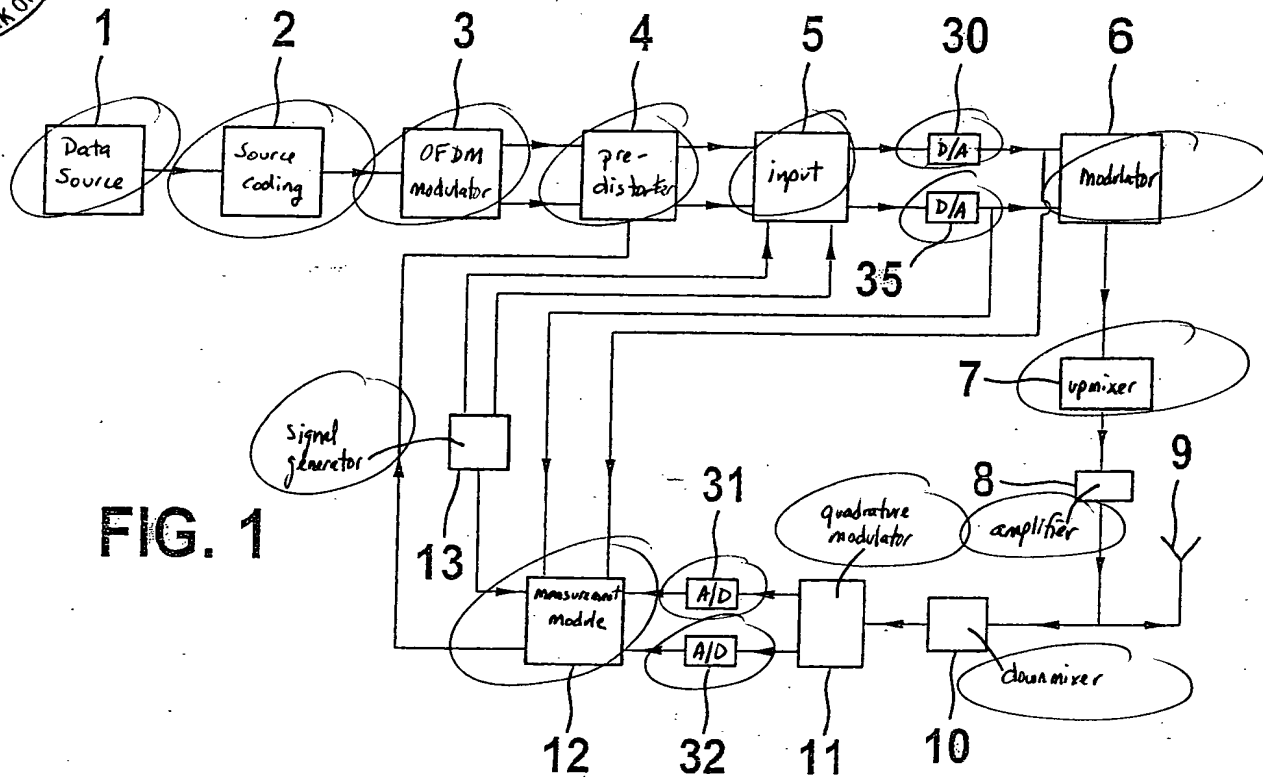


FIG. 1

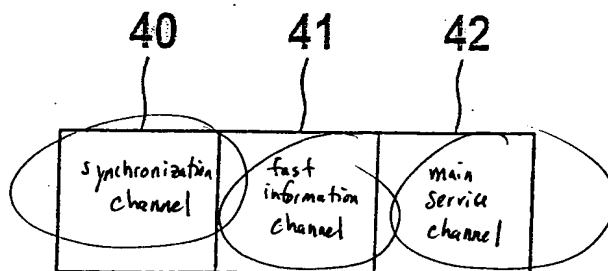


FIG. 2





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